



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,237	07/24/2005	Ryou Sakurai	Q85817	8755
23373 7590 06/27/2008				
SUGHRUE MION, PLLC				
2100 PENNSYLVANIA AVENUE, N.W.				
SUITE 800				
WASHINGTON, DC 20037				
EXAMINER				
MCCOMMAS, STUART S				
ART UNIT		PAPER NUMBER		
2629				
MAIL DATE		DELIVERY MODE		
06/27/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/521,237

**Applicant(s)**

SAKURAI ET AL.

**Examiner**

Stuart McCommas

**Art Unit**

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SG/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 23-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 recites the limitation "the liquid powders" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claims 24-26 are dependent on claim 23, and are thus also rejected for the same reason as claim 23.

Claim 25 recites the limitation "wherein a time change of the apparent volume of the liquid powders satisfies the following formula". The examiner suggests replacing this with "wherein a change of the apparent volume of the liquid powders in time satisfies the following formula", as the ratio that is claimed is not a time change.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-7, 10-15, 18-20, 23 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi et al. (United States Patent Application Publication 2002/0050976), hereinafter referenced as Yamaguchi.

Regarding claim 1, Yamaguchi discloses an image display device characterized in that the improvement comprises:

an image display means for displaying an image by moving chargeable particles arranged between electrodes by means of a voltage applied to the electrodes; and a light emission means for emitting a light to an image display surface of the image display means (paragraphs 49-50; paragraphs 101-103; paragraph 111; paragraph 114-115; figures 1-8).

Regarding claim 3, Yamaguchi discloses everything as applied above, further Yamaguchi discloses that the particles are constructed by particles having different colors and different charge characteristics (paragraph 50; paragraph 105; figures 1-8).

Regarding claim 4, Yamaguchi discloses everything as applied above, further Yamaguchi discloses wherein the particles are arranged in a space defined by partition walls (figures 1-8).

Regarding claim 5, Yamaguchi discloses everything as applied above, further Yamaguchi discloses wherein the partition walls are arranged around the space and the image display means has a plurality of pixels defined by the partition walls (paragraphs 73-75; paragraph 104; figures 1-8).

Regarding claim 6, Yamaguchi discloses everything as applied above, further Yamaguchi discloses wherein a first electrode is arranged in the space at a side of the

image display surface and a second electrode is arranged at the other side thereof (paragraph 101; figures 1-8).

Regarding claim 7, Yamaguchi discloses everything as applied above, further Yamaguchi discloses wherein both of a first electrode and a second electrode are arranged in the space at a reverse side of the image display surface (paragraphs 50-52; paragraph 101; figures 1-8).

Regarding claim 10, Yamaguchi discloses everything as applied above, further Yamaguchi discloses wherein the light emission means comprises a linear illuminant extending along a peripheral of the image display means (figure 8).

Regarding claim 11, Yamaguchi discloses everything as applied above, further Yamaguchi discloses wherein the light emission means comprises a light guide plate arranged at a front surface of the light display surface of the image display means, and a light emitted from the linear illuminant to a side surface or a rear surface of the light guide plate is reflected by the light guide plate and is emitted to the image display surface (paragraphs 114-115; figure 8).

Regarding claim 12, Yamaguchi discloses everything as applied above, further Yamaguchi discloses wherein the light guide plate comprises a substrate for introducing a light from its side surface or a rear surface (figure 8), a dotted or linear reflection-layer (protective layer 206) arranged to the substrate for reflecting a light toward the image display surface (paragraph 71), and a dark color-layer arranged to a view surface of the reflection-layer (paragraph 71; paragraphs 114-115; figures 1-8).

Regarding claim 13, Yamaguchi discloses everything as applied above, further Yamaguchi discloses wherein a V-recess having a prism surface used for reflecting a light emitted from the linear illuminant to the image display surface is arranged to a surface of the light guide plate, and a V-recess angle defined by an angle of the prism surface of the V-recess with respect to a surface of the light guide plate is set to  $25^{\circ}$  -  $40^{\circ}$  (paragraphs 114-115; figures 1-9).

Regarding claim 14, Yamaguchi discloses everything as applied above, further Yamaguchi discloses wherein a reflective property in the case of a white color displaying is such a state that an angle of incident light, at which a reflection coefficient is 0.5 in the case that an angle of incident light is varied by  $15^{\circ}$  -  $90^{\circ}$  and a reflection coefficient at  $15^{\circ}$  is not less than  $40^{\circ}$  (paragraphs 114-119; figures 1-9).

Regarding claim 15, Yamaguchi discloses everything as applied above, further Yamaguchi discloses wherein a view angle in the case of a white color displaying is not less than  $40^{\circ}$  at one side on a half bandwidth (paragraphs 114-119; figures 1-9).

Regarding claim 18, Yamaguchi discloses everything as applied above, further Yamaguchi discloses wherein the particles are made of liquid powders, which indicate a high fluidity in an aerosol state such that solid-like substances are suspended in a gas stably as dispersoid (paragraph 55; paragraphs 77-89; paragraph 106-108; figures 1-9).

Regarding claim 19, Yamaguchi discloses an image display device which comprises an image display panel, in which two or more groups of particles having different colors and different charge characteristics are sealed between opposed two

substrates, at least one of two substrates being transparent (paragraph 101; figures 1-8), and in which the particles, to which an electrostatic field produced by a pair of electrodes provided on one substrate or both substrates respectively is applied, are made to move so as to display an image, characterized in that a color filter is arranged to an outer surface or an inner surface of a transparent substrate of the image display panel so as to perform a color displaying (paragraphs 101-103; paragraphs 111-119; figures 1-9).

Regarding claim 20, Yamaguchi discloses everything as applied above, further Yamaguchi discloses wherein an average particle diameter of the particles is 0.1 - 50  $\mu\text{m}$  (paragraph 81; paragraph 107).

Regarding claim 23, Yamaguchi discloses an image display device which comprises an image display panel, in which the liquid powders, which indicate a high fluidity in an aerosol state such that solid-like substances are suspended in a gas stably as dispersoid (paragraphs 77-89; paragraph 106-108; figures 1-9), are sealed between opposed two substrates, at least one of two substrates being transparent, and, in which the liquid powders, to which an electrostatic field produced by a pair of electrodes provided on one substrate or both substrates respectively is applied, are made to move so as to display an image, characterized in that a color filter is arranged to an outer surface or an inner surface of a transparent substrate of the image display panel so as to perform a color displaying (paragraphs 101-103; paragraphs 111-119; figures 1-9).

Regarding claim 26, Yamaguchi discloses everything as applied above, further Yamaguchi discloses wherein an average particle diameter of the solid-like substances composing the liquid powders is 0.1 - 20  $\mu\text{m}$  (paragraph 81; paragraph 107).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi in view of Albert et al. (United States Patent 6,130,774), hereinafter referenced as Albert.

Regarding claim 2, Yamaguchi discloses everything as applied above, however Yamaguchi fails to disclose wherein the particles are constructed by particles having the same color and the same charge characteristics.

However the examiner maintains that it was well known in the art to wherein the particles are constructed by particles having the same color and the same charge characteristics, as taught by Albert.

In a similar field of invention Albert discloses wherein the particles are constructed by particles having the same color and the same charge characteristics (column 9 lines 42-61; figures 1A-1C).



Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yamaguchi with Albert by providing wherein the particles are constructed by particles having the same color and the same charge characteristics for the purpose of displaying an image by controlling the light emission of a display using single color particles (column 1 lines 31-55).

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi in view of Yamaguchi et al. (United States Patent 6,636,186), hereinafter referenced as 186.

Regarding claim 8, Yamaguchi discloses everything as applied above, however Yamaguchi fails to disclose wherein a gas is filled in the space.

However the examiner maintains that it was well known in the art to provide wherein a gas is filled in the space, as taught by 186.

In a similar field of invention 186 discloses wherein a gas is filled in the space (column 6 lines 11-24; figure 1).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yamaguchi with 186 by providing wherein a gas is filled in the space for the purpose of allowing particles to move easily in a space according to applied electric voltage (column 15 lines 43-51).

Art Unit: 2629

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi in view of Kado et al. (United States Patent Application Publication 2001/0004250), hereinafter referenced as Kado.

Regarding claim 9, Yamaguchi discloses everything as applied above, however Yamaguchi fails to disclose wherein the space is a pressure reduction state of 105 - 10-4 Pa.

However the examiner maintains that it was well known in the art to provide wherein the space is a pressure reduction state of 105 - 10-4 Pa, as taught by Kado.

In a similar field of invention Kado discloses wherein the space is a pressure reduction state of 105 - 10-4 Pa (paragraph 86).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yamaguchi with Kado by providing wherein the space is a pressure reduction state of 105 - 10-4 Pa for the purpose of creating a vacuum for making a display (paragraph 86).

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi in view of Liang et al. (United States Patent Application Publication 2002/0075556), hereinafter referenced as Liang.

Regarding claim 16, Yamaguchi discloses everything as applied above, further Yamaguchi discloses light emission means and image display means (figures 1-8).

However Yamaguchi fails to disclose wherein the means for displaying an image have flexibility.

However the examiner maintains that it was well known in the art to provide wherein the means have flexibility, as taught by Liang.

In a similar field of invention Liang discloses wherein the image display means and the means for multi color light emission have flexibility (paragraph 20; figure 1).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yamaguchi with Liang by providing wherein the means for displaying an image have flexibility for the purpose of creating a durable display (paragraph 20).

10. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi in view of Haga (United States Patent 6,618,188), hereinafter referenced as Haga.

Regarding claim 17, Yamaguchi discloses everything as applied above, however Yamaguchi fails to disclose wherein the image display comprises the image display surface at its both surfaces.

However the examiner maintains that it was well known in the art to provide wherein the image display comprises the image display surface at its both surfaces, as taught by Haga.

In a similar field of invention Haga discloses that the image display comprises the image display surface at its both surfaces (column 1 lines 29-34; figures 1-2).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yamaguchi with Haga by providing wherein the image

display comprises the image display surface at its both surfaces for the purpose of improving the usefulness of the display (column 1 lines 21-25).

11. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi in view of Miyamoto et al. (United States Patent 6,515,790), hereinafter referenced as Miyamoto.

Regarding claim 24, Yamaguchi discloses everything as applied above, however Yamaguchi fails to disclose wherein an apparent volume in a maximum floating state of the liquid powders is two times or more than that in none floating state.

However the examiner maintains that it was well known in the art to provide wherein an apparent volume in a maximum floating state of the liquid powders is two times or more than that in none floating state, as taught by Miyamoto.

In a similar field of invention Miyamoto discloses wherein an apparent volume in a maximum floating state of the liquid powders is two times or more than that in none floating state (column 15 lines 43-49; figures 1-4).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yamaguchi with Miyamoto by providing wherein an apparent volume in a maximum floating state of the liquid powders is two times or more than that in none floating state for the purpose of allowing the particles to be controlled according to applied voltage and current to precisely control the display (column 2 lines 36-51).

***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 19 and 21-22 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 5 of U.S. Patent No. 7,224,510 in view of Yamaguchi. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims refer to a display device with two groups of particles enclosed between two substrates.

Regarding claims 19 and 21-22 of the instant application, the claims disclose the same physical display structure and particles as claims 1 and 5 of the U.S. patent.

However claims 1 and 5 of the U.S. patent fail to disclose a color filter arranged to an outer surface or an inner surface of a transparent substrate of the image display panel so as to perform a color displaying.

However the examiner maintains that it was well known in the art to provide a color filter arranged to an outer surface or an inner surface of a transparent substrate of the image display panel so as to perform a color displaying, as taught by Yamaguchi.

In a similar field of invention Yamaguchi discloses a color filter arranged to an outer surface or an inner surface of a transparent substrate of the image display panel so as to perform a color displaying (paragraphs 56-60; paragraphs 110-113; figures 1-8; figures 10-16).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the U.S. patent with Yamaguchi by providing a color filter arranged to an outer surface or an inner surface of a transparent substrate of the

image display panel so as to perform a color displaying for the purpose of controlling the display to accurately and precisely display color images (paragraph 120).

14. Claims 23-26 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of U.S. Patent No. 7,321,459. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims refer to a display device with liquid powder and gas enclosed between two substrates.

Regarding claims 23-26 of the instant application, the claims disclose the same physical display structure and liquid powder as claims 1-4 of the U.S. patent.

However claims 1-4 of the U.S. patent fail to disclose a color filter arranged to an outer surface or an inner surface of a transparent substrate of the image display panel so as to perform a color displaying.

However the examiner maintains that it was well known in the art to provide a color filter arranged to an outer surface or an inner surface of a transparent substrate of the image display panel so as to perform a color displaying, as taught by Yamaguchi.

In a similar field of invention Yamaguchi discloses a color filter arranged to an outer surface or an inner surface of a transparent substrate of the image display panel so as to perform a color displaying (paragraphs 56-60; paragraphs 110-113; figures 1-8; figures 10-16).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the U.S. patent with Yamaguchi by providing a color filter arranged to an outer surface or an inner surface of a transparent substrate of the

image display panel so as to perform a color displaying for the purpose of controlling the display to accurately and precisely display color images (paragraph 120).

***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stuart McCommas whose telephone number is (571)270-3568. The examiner can normally be reached on Monday-Friday 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on (571)272-7687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Stuart McCommas  
Examiner  
Art Unit 2629

SSM



Art Unit: 2629

/Alexander Eisen/

Supervisory Patent Examiner, Art Unit 2629